DOCUMENT RESUME

ED 249 247 TM 840 588

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TITLE Language Development Component, Compensatory Language Experiences and Reading Program. Final Evaluation Report.
INSTITUTION Columbus Public Schools, OH. Dept. of Evaluation Services.
PUB DATE Jul 83
NOTE 71p.
PUB TYPE Reports - Evaluative/Feasibility (142) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Aptitude Treatment Interaction; Compensatory Education; *Computer Assisted Instruction; Computer Managed Instruction; Educational Objectives; Elementary Education; Inservice Teacher Education; *Low Achievement; Parent Participation; Pilot Projects; *Program Evaluation; *Reading Achievement; *Remedial Programs; Remedial Reading; State Programs; Surveys; Teacher Attitudes; Test Results
IDENTIFIERS *Columbus Public Schools OH; Education Consolidation Improvement Act Chapter 1; Metropolitan Achievement Tests

ABSTRACT

This report evaluates the 1982-83 Compensatory Language Experience and Reading Program (CLEAR), which served 5392 Ohio students, grades K-8, whose reading skills achievement was at or below the 36th percentile. The program featured individual or small group instruction. Instructional techniques and materials based on skill-centered objectives were applied to fit individual needs. Inservice training was provided for the 122 program teachers. Two pilot projects utilized computer-assisted instruction and computer-managed instruction (CAI/CMI). Data included: (1) pupil and teacher census information; (2) Metropolitan Achievement Test scores; (3) CAI/CMI prescriptive reading skills results; (4) parent involvement information; (5) various teacher inservice attitude and achievement measures; and (6) process evaluation data from on-site classroom visits. The sample contained 3356 English-speaking students. The 1982-83 CLEAR Program approached, but did not attain, the Normal Curve Equivalent (NCE) program performance objective of 1.5 NCE points per month. The microcomputer pilot projects increased mastery of specific reading and language skills, but had lower NCE results than the regular treatment group. Tables of supporting data are included. The appendix contains the forms and survey instruments used. (BS)

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ED249247

Education Consolidation and Improvement Act - Chapter 1

FINAL EVALUATION REPORT
LANGUAGE DEVELOPMENT COMPONENT
COMPENSATORY LANGUAGE EXPERIENCES AND READING PROGRAM

July, 1983

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Education Consolidation and Improvement Act - Chapter 1

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July, 1983

Program Description

The purpose of the Compensatory Language Experiences and Reading Program (CLEAR) was to provide assistance to selected underachieving pupils in grades kindergarten through eight in order that they might attain more fully their potential for and improvement of language and reading skills. To accomplish this purpose the program featured individual and small group instruction arranged according to pupil needs, as determined by continued cooperation between the program teacher and the classroom teacher. Instructional techniques and materials based on skill-centered objectives were applied to fit individual needs. Inservice was provided for program teachers.

Within the CLEAR Program there were two pilot projects utilizing computer assisted instruction and computer managed instruction (CAI/CMI). Five elementary schools participated in a project which used Commodore PET microcomputers leased from the Prescription Learning Laboratory of Springfield, Illinois. Three middle schools were served by a project which leased Dolphin microcomputers from TSC, a subsidiary of Houghton Mifflin Company. The CAI/CMI projects were staffed by six elementary teachers and six middle school teachers. In addition to providing a new technique to reading and language instruction, the use of CAI/CMI was also intended to enable participating teachers to serve more pupils than would be possible in a regular CLEAR Program unit. The use of CAI/CMI was also intended to be a cost-effective alternative to replacing badly worn conventional equipment.

The CLEAR Program first operated in 1978-79 when previous Primary and Intermediate Language Development Programs were combined to achieve greater continuity and consistency of service for elementary school pupils. The first CAI/CMI unit in the CLEAR program was piloted in the second semester of the 1981-82 school year in one elementary school. In 1982-83 the CLEAR Program was comprised of 122 teachers serving 91 public and six non-public Chapter 1 eligible schools. Of the 91 public schools, 26 were middle schools. Each teacher provided services to a maximum of 35 elementary pupils or from 48 to 56 middle school pupils at any given time, with the exception of the CAI/CMI units. Since the use of microcomputers was intended to expand the number of students served, elementary CAI/CMI teachers were allowed to exceed 35 students, and the maximum number of students for middle school CAI/CMI teachers was 96. The program served 5392 pupils, including 5130 pupils in public schools and 262

in non-public schools. Of the 5392 public school pupils, 1634 attended middle schools. The CAI/CMI units served 423 pupils in public elementary schools and 274 pupils in public middle schools, with a total of 697 pupils receiving CAI/CMI treatment.

Evaluation Objective

The evaluation objective for the CLEAR program was as follows:

> The average language/reading growth of pupils in program attendance for at least 80% of the instructional period will be 1.5 NCE points for each month of instruction as determined by a nationally standardized achievement test of language/reading.

There were an additional three objectives, which applied only to the CAI/CMI pilot projects. These objectives were as follows:

1. The program participants who have attended at least 80% of the instructional period will have passed an average of 7 prescriptive reading skill objectives from the time of the placement test to May 27, 1982 as measured by the Prescriptive Learning Laboratory skills test.

2. After completing the Prescriptive Learning Laboratory inservice designed to instruct teachers on operating teaching machines, instructing pupils in their use, prescribing instructional strategies, and maintaining a computerized instructional management system, all teachers will be able to respond correctly to 80 percent of the items included in a teacher training package instrument administered to teachers on or before October 15, 1982.

3. In May 1983, all teachers in the project will indicate that the inservice activities provided by the Prescriptive Learning Laboratory Company during the 1982-83 school year were of value in assisting them to use the teaching machines, instructing pupils in their use, prescribing instructional strategies, and to maintain a computerized instructional management system.

Although the Prescription Laboratory Company is specifically named in these objectives, the objectives were extended for evaluation purposes to also include TSC, the company which serviced the CAI/CMI project at the middle school level.

The program time period established for evaluation purposes was 140 days beginning September 20, 1982, and ending April 30, 1983. Analysis of pretest-posttest performance was contingent on pupil attendance for 112 days (80%) of the 140 day period.

Evaluation Design

The evaluation design provided for the collection of data in five areas of operation for the overall program, and an additional three areas in the CAI/CMI pilot projects. The instruments used to collect the data are found in the Appendix, with the exception of the standardized achievement tests and the computerized CAI/CMI prescriptive reding skill objectives tests.

1. ECIA Chapter 1 Pupil Census Information

   A Pupil Census Form (locally developed) was completed by program teachers for each pupil served, to provide the following information: days of program enrollment, days of program attendance, and hours of instruction per week. The form also includes information of the pupil's grade and sex. Collection of these forms was completed in May, 1983.

2. Standardized Achievement Test Information

   Program pupils were administered the Metropolitan Achievement Tests (Balow, Farr, Hogan & Prescott, 1978). This test series, which is published by The Psychological Corporation, has empirical norms for fall and spring, established in October, 1977, and April, 1978. The form, subtest, and test levels used for each grade level are listed below:

Grade	Form	Subtest	Pretest	Posttest
K	JS	Language Survey	Preprimer	Preprimer*
1	JS	Reading Survey	Preprimer*	Primer*
2	JS	Reading Survey	Primer*	Primary 1*
3	JS	Reading Survey	Primary 1*	Primary 2*
4	JS	Reading Survey	Primary 2*	Elementary
5	JS	Reading Survey	Elementary*	Intermediate
6	JI	Reading Comprehension	Elementary*	Intermediate
7	JI	Reading Comprehension	Intermediate*	Advanced 1
8	JI	Reading Comprehension	Advanced 1	Advanced 1

*Out-of-level testing

The achievement tests used at all grade levels of the CLEAR program were administered by unit teachers. Pretesting occurred during the week of October 4-8, 1982; posttesting occurred May 2-6, 1983. A substantial part of the testing was done out-of-level, as indicated in the table above.

3. CAI/CMI Prescriptive Reading Skill Objectives

Mastery in the prescriptive reading skill objectives was determined by hands-on testing at the computer terminals for pupils served in the CAI/CMI units. A maximum of 30 objectives (20 reading objectives and 10 language objectives) could be mastered by elementary CAI/CMI pupils. Elementary pupils who mastered all 20 reading objectives would then receive instruction in the 30 basic objectives at the next instructional level. The number of mastery objectives in the middle school CAI/CMI project varied with the instructional level, ranging from 53 to 64 reading objectives and from 42 to 88 language objectives at the various instructional levels. The time of pretest varied according to the time a pupil began receiving CAI/CMI instruction. Posttest data consisted of all skills mastered by April 30, 1983.

4. ECIA Chapter 1 Teacher Census Information

The locally developed Teacher Census Form was designed to provide information regarding characteristics of program personnel. Information collected included total years of teaching experience, years of Chapter 1 teaching experience, college degree level attained, and certificate in reading. The form was completed by Chapter 1 program teachers in September, 1982.

5. Parent Involvement Information

The Parent Involvement Form was constructed locally to collect data on the level and nature of parental involvement in Chapter 1 programs. Data were reported by program teachers on a monthly basis, September, 1982, through June, 1983. Monthly data included number of parents and number of hours involved in five categories of parent involvement, including a monthly unduplicated count of parents involved. In addition, a yearly unduplicated count of parents was collected at the end of the school year.

6. Inservice Evaluation

a. The locally developed General Inservice Evaluation Form was designed to obtain teacher perceptions regarding each inservice session. The form was administered to participants at the close of inservice sessions held for Chapter 1 staffs. A modified version of the form was used for the orientation meeting of September 7, 1982. Dates and topics of inservice meetings conducted by Chapter 1 in which CLEAR teachers participated were as follows:

Date	Topic
September 1, 1982	Orientation (Middle School)
September 7, 1982	Orientation (All Chapter 1 Programs)
November 19, 1982	Limited English Proficiency Program (All Chapter 1 Programs)
November 23, 1982	Motivation (All Chapter 1 Programs)
February 14, 1983	Silent and Independent Reading (Elementary and Middle School)
March 8, 1983	Self-Concept Development and Visual-Perceptual Development (All Chapter 1 Programs)
May 17, 1983	Foundations for Learning Language (Middle School)
May 23, 1983	Overview of the New Reading Program of the Columbus City Schools (Middle School)
May 26, 1983	Self Concept (Elementary and Middle School)
June 3, 1983	Follow-up on Dolphin Inservice Activities (Middle School CAI/CMI teachers)

Teachers completed inservice evaluation forms for all the above meetings.

b. Two instruments were designed to assess the knowledge gained by CAI/CMI teachers from the initial instructional meetings presented by the companies which provided the computers used in the pilot projects. Teachers in the elementary pilot project completed the Prescription Learning Laboratory Inservice Assessment Form for their initial instructional meetings, which occurred September 13-15, 1982. Teachers in the middle school pilot project completed the CLEAR-PLL-Mid (Dolphin) Inservice Assessment Form for their initial instructional meetings, which occurred November 12,

19, 22, and 23, 1982. In addition to items of instructional content, the instruments also contained rating scale items for teachers to rate the quality of the inservice provided. The elementary instrument also included rating scale items regarding the services of the visiting company consultants in helping them to implement the program.

c. The CLEAR and SDR Computer Training Evaluation Form was designed to obtain ratings by CAI/CMI teachers of the usefulness of the overall CAI/CMI inservice activities for the 1982-83 school year. The instrument was distributed in April, 1983, and collected in May, 1983. Dates of CAI/CMI inservice meetings which occurred previous to distribution of the instrument were September 13-15, 1982, and March 22, 1983 for elementary CAI/CMI teachers. Middle school CAI/CMI teachers had received inservice on November 12, 19, 22, and 23, 1982, and January 7, 1983. The ratings also took into consideration the ongoing help provided by visiting company consultants (elementary level), help with technical difficulties available from a toll-free telephone number (middle school level), and printed materials provided by the servicing companies.

In addition to the types of data specified in the evaluation design, process evaluation data were obtained in a series of on-site visits to program classrooms. A representative sample of CLEAR classrooms was chosen for observation during pretest administration of the standardized achievement test (October 4-7, 1982), and another sample was observed during the posttest administration (May 2-6, 1983). Observations were conducted by personnel from the Department of State and Federal Programs and the Department of Evaluation Services. The purpose of these observations was to obtain pertinent information regarding testing environment and test administration. Instruments used in these observations were the Chapter 1 and DPPF Pretest Observation Scale, and the Chapter 1 and DPPF Testing Observation Scale, which was used in the posttest observations. Observations were also conducted during the school year in all the CAI/CMI units by the project evaluator. Data collected in the CAI/CMI observations included teacher responses to an informal interview instrument, Questions for PLL Labs. A copy of each of the observation instruments is found in the Appendix.

Major Findings

Pupils were selected for the program on the basis of previous achievement test scores which indicated they were achieving at or below the 36th percentile in reading skills. Selection testing occurred previous to the program pretest.

A total of 5392 pupils, including 5130 pupils in public schools and 262 in non-public schools, was served by the ECIA Chapter 1 CLEAR program during the 1982-83 school year for an average of 3.8 hours of instruction per week. Of the public school pupils, 3516 were in grades K through 5 and 1614 attended middle schools. Of the public school pupils, 423 elementary pupils in grades 4-5 and 274 middle school pupils received CAI/CMI instruction. The average daily membership in the program was 4606.8 pupils. The average days of enrollment per pupil was 119.6 days, and the average attendance per pupil was 107.7 days. The average number of pupils served per teacher during the school year in the 122 teacher units was 44.2, though the average number of pupils enrolled per teacher at any given time was 37.8. The attendance criterion was met by 3618 pupils, or 67.1 of all program enrollees. Data pertaining to enrollment and attendance are presented in Table 1.

The evaluation sample was limited to pupils who had both pretest and posttest administrations of the standardized achievement test, were English-speaking, and who met the attendance criterion of at least 80% of the program days. There were 4056 pupils who received both pretest and posttest. Of these, 127 were non-English speaking and were excluded from the sample, since the validity of their test scores would be questionable. An additional 573 pupils were excluded from the sample due to non-attainment of the attendance criterion. The evaluation sample was comprised of the remaining 3356 pupils, which was 62.2% of the 5392 pupils served. Data from testing are presented in Tables 2-5.

Raw scores are reported here for grades K and 8 only, since these are the only grades which received the same level of the test in both administrations of the test. The average raw score gain in kindergarten was 8.3 items, which represented an increase in 34.6% of the 24 test items. In eighth grade there was an average raw score increase of 7.4 items, or 13.5% of the 55 test items at that test level. Raw score data are presented in Table 2. In grades 1-7, pretest and posttest were administered at different test levels, with the result that any pretest-posttest comparison of raw scores would be meaningless for these grades. However, the use of alternative level testing was judged to provide a better match between pupil ability and test difficulty.

Test data in terms of percentiles are presented in Table 3. The median percentile for pretest was well below the 36th percentile in all grades, ranging from 3.8 in kindergarten to 22.2 in grade 2. Median percentiles in the posttest ranged from 21.9 in grade 5 to 48.8 in grade 1. The most marked improvement in terms of the median percentile occurred at kindergarten and grade 1. The median percentile scores indicate gains at all grade levels, though these gains are small at grades 4 and 7. In all other grades there were increases in the median percentile of 8 or more percentile points.

Table 4 presents pretest and posttest data in terms of grade equivalents. It should be noted that a grade equivalent of 0.0 appearing in the data for grades K, 1 and 2 can be deceptive, as it

Table 1

Number of Pupils Served; Averages for Days of Enrollment, Days of Attendance, Daily Membership and Hours of Instruction Per Week; and Pupils Attending 80% of Days Reported by Grade Level

Grade	Pupils Served	Girls	Boys	Average Days of Enrollment	Average Days of Attendance	Average Daily Membership	Average Hours of Instruction per Pupil per Week	Pupils Attending 80% of Days
K	70	25	45	115.3	105.2	57.6	3.4	48
1	274	118	156	112.5	102.7	220.2	4.0	179
2	1385	603	782	117.7	108.2	1164.6	4.0	913
3	832	346	486	120.8	110.2	717.7	4.0	606
4	670	295	375	119.4	108.9	571.2	3.7	465
5	527	253	274	120.4	108.3	453.2	3.8	354
6	908	394	514	123.8	109.7	802.9	3.6	627
7	586	267	319	118.6	101.0	496.6	3.7	337
8	140	61	79	122.8	106.0	122.8	3.6	89
Total	5392	2362	3030	119.6	107.7	4606.8	3.8	3618

Table 2

Minimum, Maximum, Average, and Standard Deviation
of the Pretest and Posttest Raw Scores
Reported by Grade Level

Grade	Number of Test Items	Number of Pupils	Pretest				Posttest				Average Change
			Min.	Max.	Average Correct	Standard Deviation	Min.	Max.	Average Correct	Standard Deviation	
K	24	47	1	22	11.8	4.5	12	24	20.0	3.4	8.3
8	55	75	3	38	21.2	6.4	13	46	28.6	8.1	7.4

Note: Raw scores are reported only for grades K and 8, because only these grades received the same level of the test in both pretest and posttest. A comparison of raw scores across different test levels would be meaningless, since item content and number of items may vary across the test levels.

Table 3

Minimum, Maximum, Median, and Standard Deviation
of the Pretest and Posttest Percentiles
Reported by Grade Level

Grade	Number of Pupils	Pretest				Posttest			
		Min.	Max.	Median Percentile	Standard Deviation	Min.	Max.	Median Percentile	Standard Deviation
K	47	1	86	3.8	14.3	1	90	45.8	28.8
1	162	1	66	10.5	15.6	4	88	48.8	24.0
2	857	1	70	22.2	16.0	1	92	36.2	22.1
3	565	1	86	18.4	17.7	1	99	33.5	20.3
4	420	1	92	22.0	15.1	1	88	23.6	17.0
5	322	1	70	13.6	10.3	1	98	21.9	14.5
6	596	1	82	14.0	13.7	1	99	26.4	14.9
7	312	1	70	20.3	14.8	1	89	24.1	17.1
8	75	1	52	15.9	11.3	1	70	23.9	16.7

Table 4

Minimim, Maximum, Median, and Standard Deviation
of the Pretest and Posttest Grade Equivalents
Reported by Grade Level

Grade	Number of Pupils	Pretest				Posttest			
		Min.	Max.	Median Grade Equivalent	Standard Deviation	Min.	Max.	Median Grade Equivalent	Standard Deviation
K	47	0.0*	0.9	0.0	0.1	0.0	1.6	0.5	0.6
1	162	0.0	1.2	0.5	0.4	0.9	2.7	1.6	0.4
2	857	0.0	2.7	1.6	0.4	0.7	5.9	2.4	0.8
3	565	0.7	5.9	2.1	0.6	1.4	11.2	2.8	1.1
4	420	1.4	8.9	2.6	0.7	1.6	9.1	3.0	1.1
5	322	1.3	6.8	2.7	0.6	1.6	12.9	3.5	1.2
6	596	1.1	10.4	3.0	1.2	1.5	12.9	4.1	1.6
7	312	1.0	9.1	3.9	1.5	1.6	12.9	5.1	1.9
8	75	1.3	8.5	4.3	1.5	2.4	11.3	6.3	2.1

* In grade K, the comparison of pretest and posttest scores is a very conservative one, due to the fact that a score of 0.0 can represent not only those pupils functioning at beginning kindergarten level, but also those functioning at pre-kindergarten level. This was also true of the minimum scores of 0.0 appearing in grades 1 and 2.

includes not only those pupils functioning at beginning kindergarten level, but also those functioning at pre-kindergarten level. Thus the comparison of pretest and posttest median grade equivalents in kindergarten (pretest 0.0 and posttest 0.5) is a very conservative comparison due to the ambiguity of the 0.0 grade equivalent score. This ambiguity has less effect on the data displayed for grades 1 and 2, where grade equivalent scores of 0.0 appear in the table only as minimum scores, and would not alter the median scores. All grades showed a positive change in the median grade equivalent score in the seven-month treatment period from pretest to posttest. The greatest change in median grade equivalent is noted at grade 8 (pretest 4.3 and posttest 6.3). Other substantial changes are seen at grade 7 (pretest 3.9, posttest 5.1), grade 6 (pretest 3.0, posttest 4.1), and grade 1 (pretest 0.5, posttest 1.6). The smallest changes in median grade equivalent scores occurred at grade 4 (pretest 2.6, posttest 3.0) and kindergarten (pretest 0.0, posttest 0.5). However, greater change is inferred at the kindergarten level than this comparison would indicate, due to the ambiguity of the median pretest score of 0.0, as noted above.

The presentation of achievement data thus far has included results from the analysis of raw scores, percentiles, and grade equivalents. Raw scores are equal units of measurement, but can only provide a limited interpretation of achievement data. Percentiles and grade equivalents provide comparative information but are not equal units of measure. Caution is advised in drawing conclusions about program impact from any of the scores above. Normal curve equivalents (NCE's) are generally considered to provide the truest indication of pupil growth in achievement, since they provide comparative information in equal units of measurement. Data for normal curve equivalents are presented in Table 5.

The overall average NCE gain for the program was 9.0. The average NCE gain per month in the seven-month period between pretest and posttest was 1.3, which fell short of the evaluation objective of an average gain of 1.5 NCE's per month. The evaluation criterion was exceeded at kindergarten and grade 1. The NCE gain in kindergarten was 30.8 overall, or 4.4 NCE's per month. First grade pupils averaged an overall gain of 24.3, or 3.5 NCE's per month. The third grade overall average gain of 10.8 met the objective of 1.5 NCE's per month. Attainment of the objective was approached by grade 2 (9.6 overall, 1.4 per month), grade 6 (8.9 overall, 1.3 per month), and grade 5 (8.1 overall, 1.2 per month). Smaller NCE gains were made at grade 8 (6.5 overall, 0.9 per month), grade 7 (3.7 overall, 0.5 per month), and grade 4 (2.6 overall, 0.4 per month).

Although NCE gains were disappointing at some grade levels, it should be kept in mind that NCE's are based on percentiles, which compare the pupil's performance in relation to the general population. For a pupil's NCE score to remain the same at posttest as at pretest does not denote a lack of absolute progress; on the contrary it means that the pupil has maintained the same relative position in terms of the general population. Even a small gain in NCE's indicates an advancement from the pupil's original standing. The fact that progress occurred can be verified by the comparisons

Table 5

Minimum, Maximum, Average, and Standard Deviation of the Pretest and Posttest Normal Curve Equivalents (NCE) Reported by Grade Level

Grade	Number of Pupils	Pretest Min.	Pretest Max.	Pretest Average NCE	Pretest Standard Deviation	Posttest Min.	Posttest Max.	Posttest Average NCE	Posttest Standard Deviation	Average Change
K	47	1.0	72.8	15.2	15.7	1.0	77.0	45.9	20.7	30.8
1	162	1.0	58.7	24.6	15.1	13.1	74.7	48.9	15.0	24.3
2	857	1.0	61.0	32.5	12.9	1.0	79.6	42.1	15.6	9.6
3	565	1.0	72.8	29.6	15.1	1.0	99.0	40.4	14.2	10.8
4	420	1.0	79.6	31.7	12.7	1.0	74.7	34.3	12.9	2.6
5	322	1.0	61.0	24.5	11.1	1.0	93.3	32.6	11.6	8.1
6	596	1.0	69.3	27.2	12.2	1.0	99.0	36.1	11.1	8.9
7	312	1.0	61.0	31.3	12.7	1.0	75.8	34.9	13.2	3.7
8	75	1.0	51.1	27.5	11.4	1.0	61.0	34.1	12.4	6.5
Total	3356			29.4	13.5			38.4	14.3	9.0

between pretest and posttest grade equivalent median scores which were noted earlier. Substantial changes in grade equivalent scores were noted at grades 7 and 8, but not at grade 4.

Tables 6-10 present comparisons between the pilot projects receiving computer assisted/computer managed instruction (CAI/CMI) in reading and the group receiving the regular program instruction. Comparisons are made for only those grade levels where CAI/CMI instruction was available, grades 4-8. The regular group sample includes both public and non-public school pupils.

As indicated in Table 6, there were 697 pupils served by the two CAI/CMI pilot projects. Of these, 423 pupils were served by the Prescription Learning Laboratory (PLL) project in grades 4 and 5. An additional 274 pupils were served by the Dolphin project in grades 6-8. The group receiving regular program instruction included 774 pupils in grades 4 and 5, and 1360 pupils in grades 6-8. The total number of pupils in grades 4-8 who received regular program instruction was 2134. The average days of attendance tended to be slightly higher for the CAI/CMI groups than for the regular group, though this was not true of all grade levels. The average daily membership totaled 604.9 in the CAI/CMI projects (361.1 in PLL grades 4-5 and 243.8 in the middle school Dolphin project). Average daily membership in the regular group totaled 1841.8 (663.2 in grades 4-5 and 1178.6 in middle school).

The evaluation sample of 434 pupils in the CAI/CMI group included 265 pupils in the PLL project (grades 4-5) and 169 pupils in the Dolphin project (grades 6-8). The regular group included 477 pupils in grades 4-5, and 814 pupils in grades 6-8, or a total of 1291 pupils in grades where it was possible to compare treatment groups.

Achievement data comparisons are presented in Tables 7-10. Raw score comparisons (Table 7) are made only at grade 8, which was the only grade in the comparable population which received the same level of the test in both pretest and posttest. The average change in raw score for eighth grade was 6.9 in the CAI/CMI group and 7.5 in the regular group. Positive changes occurred in both comparison groups at all grade levels in terms of percentile scores (Table 8) and grade equivalent scores (Table 9). Any further group comparisons based on percentile or grade equivalent scores would be of questionable validity, since neither of these two measures is composed of equal units of measurement.

Table 6

Number of Pupils Served, Averages for Days of Enrollment, Days of Attendance, Daily Membership and Hours of Instruction Per Week, and Pupils Attending 80% of Days Reported by Grade Level for Pupils Receiving Reading Instruction with Computers (CAI/CMI Groups) and Pupils Receiving Reading Instruction without Computers (Regular Group)

Grade	Pupils Served	Girls	Boys	Average Days of Enrollment	Average Days of Attendance	Average Daily Membership	Average Hrs. of Inst. Per Pupil Per Week	Pupils Attending 80% of Days
CAI/CMI Groups								
4	241	110	131	120.3	111.5	207.1	3.7	176
5	182	83	99	118.5	105.6	154.0	3.8	122
6	132	60	72	123.2	106.0	116.1	3.6	87
7	118	47	71	123.5	102.5	104.1	3.7	72
8	24	9	15	137.5	123.4	23.6	3.8	20
Total	697	309	388	121.5	107.8	604.9	3.7	477
Regular Group								
4	429	185	244	118.8	107.5	364.1	3.8	289
5	345	170	175	121.4	109.6	299.1	3.8	232
6	776	334	442	123.9	110.4	686.8	3.6	540
7	468	220	248	117.4	100.7	392.5	3.6	265
8	116	52	64	119.8	102.4	99.3	3.5	69
Total (GR. 4-8)	2134	961	1173	120.8	107.1	1841.8	3.7	1395

Table 7

Minimum, Maximum, Average, and Standard Deviation
of the Pretest and Posttest Raw Scores Reported by Grade Level
for Pupils Receiving Reading Instruction with Computers (CAI/CMI Groups)
and Pupils Receiving Reading Instruction without Computers (Regular Group)

			Pretest				Posttest				
Grade	Number Of Test Items	Number of Pupils	Min.	Max.	Average Raw Score	Standard Deviation	Min.	Max.	Average Raw Score	Standard Deviation	Average Change
CAI/CMI Groups											
8	55	18	9	35	20.3	7.0	13	46	27.2	9.1	6.9
Regular Group											
8	55	57	3	38	21.5	6.2	15	46	29.0	7.8	7.5

Note: Raw scores are reported only for grade 8, because this was the only grade in the comparable population that received the same level of the test in both pretest and posttest. A comparison of raw scores across different test levels would be meaningless, since item content and number of items may vary across the test levels.

Table 8

Minimum, Maximum, Median, and Standard Deviation
of the Pretest and Posttest Percentiles Reported by Grade Level
for Pupils Receiving Reading Instruction with Computers (CAI/CMI Groups)
and Pupils Receiving Reading Instruction without Computers (Regular Group)

Grade	Number of Pupils	Pretest				Posttest			
		Min.	Max.	Median Percentile	Standard Deviation	Min.	Max.	Median Percentile	Standard Deviation
CAI/CMI Groups									
4	157	1	92	21.6	16.6	1	88	23.0	17.5
5	108	1	70	14.0	12.6	1	77	22.7	15.1
6	84	1	62	11.5	11.2	1	48	18.5	10.5
7	67	1	66	15.9	14.1	1	56	16.3	14.0
8	18	1	44	12.5	12.5	1	70	23.0	18.6
Regular Group									
4	263	1	78	22.3	14.2	1	88	24.3	16.8
5	214	1	66	12.3	8.8	1	98	20.5	14.3
6	512	1	82	14.2	14.1	1	99	27.9	15.1
7	245	1	70	22.2	14.9	1	89	26.4	17.2
8	57	1	52	16.4	10.9	4	70	24.0	16.2

Table 9

Minimum, Maximum, Median, and Standard Deviation
of the Pretest and Posttest Grade Equivalents Reported by Grade Level
for Pupils Receiving Reading Instruction with Computers (CAI/CMI Groups)
and Pupils Receiving Reading Instruction without Computers (Regular Group)

		Pretest				Posttest			
Grade	Number of Pupils	Min.	Max.	Median Grade Equivalents	Standard Deviation	Min.	Max.	Median Grade Equivalent	Standard Deviation
CAI/CMI Groups									
4	157	1.4	8.9	2.6	0.9	1.6	9.1	3.0	1.2
5	108	1.3	6.8	2.7	0.8	1.6	9.1	3.6	1.2
6	84	1.9	7.4	2.9	0.9	1.5	6.7	3.5	1.0
7	67	1.8	8.6	3.4	1.4	1.6	8.5	4.1	1.6
8	18	1.8	7.7	3.9	1.7	2.4	11.3	6.2	2.4
Regular Group									
4	263	1.5	6.3	2.6	0.6	1.7	9.1	3.0	1.1
5	214	1.5	6.3	2.6	0.5	1.9	12.9	3.4	1.2
6	512	1.1	10.4	3.1	1.2	2.0	12.9	4.3	1.6
7	245	1.0	9.1	4.0	1.5	1.7	12.9	5.3	1.9
8	57	1.3	8.5	4.3	1.5	2.8	11.3	6.3	2.0

As indicated earlier, NCE scores are generally considered to provide the most comparative information in equal units of mesurement. Data for CAI/CMI groups and regular instruction group are presented in Table 10. Comparisons at grades 4-5 indicate that the elementary CAI/CMI group made the greater NCE gain at grade 4, but that the regular group made the greater gain at grade 5. The average NCE gain at grades 4-5 ws 4.7 for the CAI/CMI group and 5.1 for the regular group. At the middle school level, the regular group made greater NCE gains at all grade levels than did the CAI/CMI group. The average NCE gain in grades 6-8 ws 3.3 for the CAI/CMI group and 7.9 for the regular group. An overall comparison indicates an average NCE gain of 4.2 across the two pilot projects utilizing computers, and an average NCE gain of 6.8 across comparable grade levels for pupils receiving regular program instruction. Neither the CAI/CMI groups nor the regular treatment group attained the program objective of an average gain of 1.5 NCE's per month.

There was an additional performance objective for pupils served by the two CAI/CMI pilot projects: that pupils who attended at least 80% of the instructional period would make an average gain of at least seven prescriptive reading skill objectives as measured by the Prescription Learning Laboratory Mastery Test. In grades 4-5, testing occurred at the computer terminals using software supplied by the Prescription Learning Laboratory Company. Mastery testing in middle school CAI/CMI also occurred at the computer terminals, but a different company, TSC, supplied the programmed tests at this level. A maximum of 30 objectives (20 reading and 10 language) could be mastered at any given level of the elementary test, while the number of middle school objectives varied with the test level, ranging from 53 to 64 reading objectives and from 42 to 88 language objectives.

Averages and standard deviations for the prescriptive reading objectives are presented in Table 11. The performance criterion of an average gain of seven skill objectives was exceeded at all grade levels. Prescription Learning Laboratory pupils in grades 4-5 averaged a gain of 11.5 objectives in a continuum of 30 objectives. Pupils in the middle school Dolphin project, where the number of possible objectives was higher, made average gains of 32.5 reading skill objectives and 11.4 language skill objectives. One caution is advised in interpreting the mastery test data: the pretests were useful tools for placement purposes, but were not designed for comprehensive pretest measurement. Since the pretests did not cover all skill objectives in the continua, it is not certain that gain scores can be attributed entirely to treatment occurring between pretest and posttest. Correlations between gains on the skill objectives and gains in NCE points were calculated, using the Pearson product-moment formula. There was a small negative correlation of -.12 at the elementary level and at the middle school level there were small positive correlations of .17 for the reading skill objectives and .08 for the language skill objectives.

Table 10

Minimum, Maximum, Average, and Standard Deviation of the
Pretest and Posttest Normal Curve Equivalents (NCE)
Reported by Grade Level
for Pupils Receiving Reading Instruction with Computers (CAI/CMI Groups)
and Pupils Receiving Reading Instruction without Computers (Regular Group)

		Pretest				Posttest				
Grade	Number of Pupils	Min.	Max.	Average NCE	Standard Deviation	Min.	Max.	Average NCE	Standard Deviation	Average Change
CAI/CMI Groups										
4	157	1.0	79.6	31.6	14.2	1.0	74.7	34.5	13.1	2.9
5	108	1.0	61.0	26.0	12.4	1.0	65.6	33.4	11.7	7.4
6	84	1.0	56.4	24.5	11.2	1.0	48.9	30.0	10.2	5.4
7	67	1.0	58.7	28.8	12.8	1.0	53.2	28.6	12.9	- 0.2
8	18	1.0	46.8	25.4	12.8	1.0	61.0	31.8	14.6	6.4
Subtotal 4-5 (PLL)	265			29.3	13.7			34.0	12.5	4.7
Subtotal 6-8 (Dolphin)	169			26.3	12.1			29.6	11.8	3.3
Total CAI/CMI	434			28.1	13.2			32.3	12.4	4.2
Regular Group										
4	263	1.0	66.3	31.8	11.8	1.0	74.7	34.2	12.9	2.4
5	214	1.0	58.7	23.7	10.4	1.0	93.3	32.2	11.5	8.5
6	512	1.0	69.3	27.7	12.3	1.0	99.0	37.2	10.9	9.5
7	245	1.0	61.0	31.9	12.7	1.0	75.8	36.7	12.7	4.7
8	57	1.0	51.1	28.2	11.0	13.1	61.0	34.8	11.6	6.6
Subtotal 4-5	477			28.2	--			33.3	--	5.1
Subtotal 6-8	814			29.0	--			36.8	--	7.9
Total Regular	1291			28.7	12.3			35.5	11.9	6.8

Table 11

Average Scores and Standard Deviations of the Pretest, Posttest, and Change in Skills Mastered in the Prescription Learning Laboratory Mastery Test by Pupils in the CAI/CMI Project

Grade	Number of Pupils	Pretest Skills Mastered Average	Pretest Skills Mastered Standard Deviation	Posttest Skills Mastered Average	Posttest Skills Mastered Standard Deviation	Change Average	Change Standard Deviation
PLL Objectives							
4	155	1.4	1.1	12.0	5.4	10.6	5.0
5	108	1.1	1.1	13.9	5.4	12.8	5.5
Total	263	1.3	1.1	12.8	5.5	11.5	5.3
Dolphin Objectives (Reading)							
6	84	21.4	10.8	54.3	27.8	32.9	23.5
7	67	17.6	9.6	45.4	22.1	27.8	19.6
8	18	23.6	10.2	72.2	35.6	48.6	31.2
Total	169	20.1	10.5	52.7	27.7	32.5	23.7
Dolphin Objectives (Language)							
6	84	3.0	3.3	12.0	12.0	9.0	11.2
7	67	3.5	4.3	16.5	13.7	13.0	13.0
8	18	0.0	0.0	16.3	27.8	16.3	27.8
Total	169	2.9	3.7	14.2	15.1	11.4	14.6

Teacher Census Forms were completed in September, 1982, by the 122 teachers assigned to Chapter 1 ECIA CLEAR units. All teachers had at least a bachelor's degree and 60 teachers (49.2%) had a master's degree. The number of teachers having certification in reading as a subject area was also 58, or (47.5%) of the program's teachers. The average number of years of teaching experience was 21.5 overall, and 9.4 in Title I/Chapter 1 teaching experience. Of the 122 program teachers, 115 had assignments in public schools, and seven in non-public units. Twelve of the teachers in public schools were assigned to CAI/CMI units. All program teachers were employed full-time in the program.

The Parent Involvement Form provided information from teachers at the end of each month, September, 1982, through June, 1983, concerning program activities involving parents who had children in the program. These data are presented by month in Table 12. Months showing the most parent involvement were October, with a total of 1526 contacts in 840.8 parent hours, and March, with 1094 contacts in 594.5 parent hours. Individual parent conferences accounted for more parent contacts (3862) and more parent hours (1606.75) over the school year than any other activity. Yearly totals for the other activities were: group meetings with parents, 1147 contacts in 1255.0 parent hours; parent classroom visits or field trips, 976 contacts in 808.1 parent hours; planning, operation, and/or evaluation, 431 contacts in 180 parent hours; and visits by teacher to parents' homes, 278 contacts in 92.0 parent hours. The yearly totals for all five types of parent activity were 6694 parent contacts in 3941.85 parent hours. Since a parent could have involvement in more than one contact, a yearly unduplicated count was also obtained from program teachers in June. This count indicated a total of 3184 parents of program pupils had one or more contacts with the program during the school year.

A separate end-of-the year teacher survey was used to determine program involvement by non-program parents. This survey indicated that an additional 593 parents who did not have children in the program were involved in 721 contacts with the program in 723.0 parent hours over the school year.

The General Inservice Evaluation Form was completed by program teachers for ten inservice sessions which occurred from September, 1982 through June, 1983. Participants were asked after each session to rate four statements about the inservice on a scale of one to five:

1 = Strongly Disagree
2 = Disagree
3 = Undecided
4 = Agree
5 = Strongly Agree

Generally, workshop participants rated Chapter 1 inservice meetings positively. Overall ratings by participants are summarized in Table 13.

Table 12

Number of Parents Involved
and Total Parent Hours
Reported by Month

Items	Months									
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1. Parents involved in the planning, operation and/or evaluation of your unit										
Number of Parents	118	8	8	18	88	27	20	4	87	53
Total Parent Hours	5.5	15.5	6.0	29.0	23.5	3.5	24.0	4.0	42.5	26.5
2. Group meetings for parents										
Number of Parents	41	427	37	73	119	38	104	148	115	45
Total Parent Hours	14.5	398.0	58.5	80.0	38.5	96.5	126.0	227.0	163.5	52.5
3. Individual parent conferences										
Number of Parents	203	591	356	529	228	301	827	253	264	310
Total Parent Hours	65.5	271.0	132.95	236.8	76.5	101.5	363.0	131.0	95.5	133.0
4. Parental classroom visits or field trips										
Number of Parents	25	489	77	64	28	46	107	37	57	46
Total Parent Hours	11.0	152.3	194.3	54.5	36.0	55.5	76.5	45.5	151.0	31.5
5. Visits by teacher to parents' homes										
Number of Parents	56	11	23	8	2	52	36	4	35	51
Total Parent Hours	2.0	4.0	19.5	2.5	11.0	3.5	5.0	32.5	6.0	6.0

Table 13

Average Response and Percent of Response
For Reactions to Inservice Statements

Statements	Number Responding	Average Response	Percent SD (1)	D (2)	U (3)	A (4)	SA (5)
1. I think this was a very worthwhile meeting.	662	4.2	3.2	4.4	3.3	45.3	43.8
2. The information presented in the meeting will assist me in my program.	664	4.2	3.0	4.4	5.9	47.4	39.3
3. There was time to ask questions pertaining to the presentation.	659	4.3	3.0	2.6	3.2	45.5	45.7
4. Questions were answered adequately.	648	4.3	2.3	1.9	4.0	45.7	46.1

Open-ended comments on the General Inservice Evaluation Form asked participants to comment about the most and least valuable parts of the meetings, and about information they would like to have covered in future meetings. Only those open-ended comments which were made by five or more participants at any single session will be summarized here. However, the evaluation reports on individual sessions have been forwarded to the Department of Federal and State Programs, and are available on request.

In regard to the most valuable parts of inservice meetings, the following items were notable from teachers' comments: presentations by various speakers, handouts received at meetings, the use of structure mats, small group sessions, a film on refugees, presentation of practical methods and suggestions, enthusiasm and/or inspirational value of speaker's presentation, a commercial materials exhibit, idea sharing, discussions on oral and silent reading, book and explanations regarding foundations of learning, and a presentation on the new reading series adapted by the Columbus Public Schools. A frequent non-answer was that "all" or "everything" was the most valuable part of the meeting.

The question regarding the least valuable parts of meetings also elicited the frequent non-answer that "none" was the least valuable part of the meeting, or "all was valuable." Usable comments included the criticism that presentations were sometimes repetitious of things that had been heard before, and that more time would have been desirable for the topic on the Limited English Proficiency Program.

Suggestions for future meetings included three responses with a frequency of five or more for any one meeting. These were: the Return of Dr. Brown-Nash, more on the Limited English Proficiency Program, and suggestions for various types of workshops.

In addition to the inservice activities provided for the overall group of CLEAR teachers, specialized inservice activities were provided for teachers in the CAI/CMI projects. The purpose of these activities was to instruct teachers in four areas: (1) operating teaching machines, (2) teaching pupils to operate the machines, (3) prescribing instructional strategies, and (4) maintaining a computerized instructional management system. These four areas provided the criteria for evaluation of two objectives related to CAI/CMI inservice activities. The Prescription Learning Laboratory Company provided initial inservice to elementary CAI/CMI teachers on Commodore PET computers on September 13-15, 1982, and also held a follow-up meeting on March 22, 1983. The TSC Company provided middle school CAI/CMI teachers with initial inservice on Dolphin computers on November 12, 19, 22, and 23, 1982, and also held a follow-up meeting on January 7, 1983. A final meeting for middle school CAI/CMI teachers was held June 3, 1983. Evaluative data for the final Dolphin meeting were collected on the General Inservice Evaluation Form, and so are included above in the summary of inservice for the overall program.

The first of two objectives regarding CAI/CMI inservice activities required that all CAI/CMI teachers be able to respond to at least 80 percent of the items on an instrument dealing with inservice content. Separate instruments were used for assessment of this objective at the two instructional levels: the Prescription Learning Laboratory Inservice Assessment Form for elementary CAI/CMI teachers, and the CLEAR-PLL-Mid (Dolphin) Inservice Assessment Form for middle school CAI/CMI teachers. The instruments were administered subsequent to the initial inservice training sessions. In addition to the items dealing with inservice content, teachers in both CAI/CMI groups were asked to rate the inservice sessions. Teachers in the elementary group were also asked to rate the services of the PLL company's visiting consultants. The objective was attained at the middle school level, with all teachers answering at least 80% of the content items correctly. Middle school teachers' scores ranged from 83.3% to 95.8%, with a group average of 88.2%. The objective was not attained at the elementary level, where scores ranged from 75% to 100.0%. However, the group average for elementary teachers was 82.5%.

In rating the initial CAI/CMI training sessions, a five-point scale was applied by teachers to the inservice instruction in regard to the four purposes of inservice as stated in the objective. Elementary CAI/CMI teachers also used the five-point scale to rate the services provided by the visiting consultants from Prescription Learning Laboratory Company. The consultants visited each elementary CAI/CMI unit twice a month, providing inservice and help with special problems. Ratings by elementary and middle school teachers following the initial CAI/CMI inservice sessions are displayed in Table 14.

Table 14

Teachers' Ratings of Initial Inservice Activities for CAI/CMI Projects, by Area of CAI/CMI Inservice Objectives

	Inservice Provided by PLL Company (Elementary)						Initial Inservice Provided by TSC Company (Middle School)		
	Initial Inservice Sessions			Services of Visiting Consultant					
	N	Range	Median	N	Range	Median	N	Range	Median
1. Operating teaching machines	5	3-5	4.0	3	3-5	4.0	6	3-5	3.5
2. Instructing pupils in the use of teaching machines	4	2-4	3.5	3	3-5	4.0	6	3-5	3.0
3. Prescribing instructional strategies	4	2-5	3.5	3	3-5	4.0	6	3	3.0
4. Maintaining a computerized instructional management system	5	2-5	2.0	3	4-5	5.0	6	3-4	3.0

Key:

1 = Poor
2 = Satisfactory
3 = Good
4 = Excellent
5 = Superior

Median ratings by elementary teachers in regard to the initial inservice sessions were: operating teaching machines 4.0 (excellent), instructing pupils in the use of teaching machines 3.5 (between good and excellent), prescribing instructional strategies 3.5, and maintaining a computerized instructional management system 2.0 (satisfactory). In rating the services of the visiting consultants in regard to their help in the same four areas of inservice, elementary teachers assigned a median rating of 5.0 (superior) in the area of maintaining a computerized instructional management system, and 4.0 (excellent) in each of the other three areas. Middle school teachers rated their initial inservice sessions with a median rating of 3.5 in the area of operating teaching machines, and 3.0 (good) in each of the other three areas.

The final objective regarding CAI/CMI inservice activities stated that all project teachers would indicate in May, 1983, that the inservice activities were of value to them in the four areas of CAI/CMI inservice which have been identified above. The CLEAR and SDR Computer Training Evaluation Form was designed to evaluate this objective. The instrument used a five-point scale ranging from "strongly disagree" to "strongly agree," with a mid-point of "undecided." The data were collected in May. By that time teachers in each of the two pilot projects had received a follow-up inservice session in addition to the initial sessions which had been evaluated on another instrument. The timing of the May instrument also permitted an overall perspective of the inservice activities provided over the school year. For purposes of evaluation, inservice activities were defined to include training and follow-up sessions, the ongoing help of visiting consultants at the elementary level, the use of a toll-free telephone number for technical assistance at the middle school level, and printed materials provided by the servicing companies. Summative data from this instrument are presented in Table 15.

In assessing the overall value of inservice activities in regard to the four areas stated in the objective, all elementary and middle school CAI/CMI teachers "agreed" or "strongly agreed" (ratings of 4.0 and 5.0) that inservice activities were helpful to them in "learning to use instructional machines" and "instructing pupils in using machines." The third area, "prescribing instructional strategies," was not attained in either project: one elementary teacher gave a rating of 2.0 (disagree), and two middle school teachers gave ratings of 3.0 (undecided). The fourth criterion area, "maintaining a computerized instructional management system," was attained in the middle school project, where all teachers gave the rating of 4.0 (agree), but was not attained in the elementary project, where one teacher gave a rating of 3.0 (undecided). In rating the helpfulness of inservice activities in implementing the overall program, one elementary teacher and one middle school teacher gave a rating of 3.0. To summarize, the objective was partially attained, with attainment occurring in two of the four criteria in the elementary project, and in three of the four criteria in the middle school project. It is possible that the objective was too stringent in requiring unanimous agreement, since a single rating of "undecided" or less could constitute non-attainment. It will be noted from Table 15 that all average ratings are in a positive direction (greater than 3.0).

Table 12

Average Response and Frequencies of Teacher Ratings of the Value of Overall Inservice Training to Areas of the Inservice Objective

Area of Objective	Level	N	Average Response	SD 1	D 2	U 3	A 4	SA 5
Learning to use instructional machines	Elementary	6	4.5	0	0	0	3	3
	Middle School	6	4.5	0	0	0	3	3
	Total	12	4.5	0	0	0	6	6
Instructing pupils in using machines	Elementary	6	4.3	0	0	0	4	2
	Middle School	6	4.3	0	0	0	4	2
	Total	12	4.3	0	0	0	8	4
Prescribing instructional strategies	Elementary	6	4.2	0	1	0	2	3
	Middle School	6	3.7	0	0	2	4	0
	Total	12	3.9	0	1	2	6	3
Maintaining computerized instructional management system	Elementary	6	4.2	0	0	1	3	2
	Middle School	6	4.0	0	0	0	6	0
	Total	12	4.1	0	0	1	9	2
Implementing overall program	Elementary	6	4.2	0	0	1	3	2
	Middle School	6	3.8	0	0	1	5	0
	Total	12	4.0	0	0	2	8	2

In addition to the types of data specified in the evaluation design, process evaluation data were obtained by means of on-site visits. Observations were made during the pretest and posttest administrations of the achievement tests for the overall program, in order to gain first-hand information in regard to testing environment and test administration. Visits were also made during the year to the two CAI/CMI pilot projects.

Elements of the testing environment were generally judged to be good or very good. Aspects of testing environment that were checked included lighting in the testing area, space for each student, sound or noise level, and temperature. In the few instances where aspects of the environment were judged to be less than acceptable, the problems could not have been controlled by the program teacher.

The presentation of test directions was generally rated as good or very good. In most cases the test directions were read by the teacher. In addition, some teachers demonstrated on the board an example of the method for marking the answers.

During the testing sessions the appropriate materials were generally judged to be available in most cases. The most common omissions were: failing to place a "Testing--Do Not Disturb" sign on the door, failing to provide pencils with erasers for each student, failing to use a stopwatch, watch or clock with a second hand for timing the test, and failing to use a copy of the test booklet for demonstration purposes.

Several visits were conducted during the school year to the CAI/CMI units by the project evaluator. It was noted that delays in installation of the Dolphin microcomputer labs in the middle school units prevented implementation of computer assisted/managed instruction in the middle school project until November, when the computers were installed and initial inservice was conducted. Implementation of middle school CAI/CMI began just after the Thanksgiving break. One of the elementary PLL units also had a late start because the original microcomputers had been stolen and had to be replaced. This unit, however, was operating at the time of the visit in October.

Interviews conducted with CAI/CMI teachers in elementary and middle school indicated that pupils became accustomed to using the microcomputers in a remarkably short time. Teachers reported varying degrees of technical difficulties with machines or software, but indicated that these difficulties were worked out satisfactorily by the companies supplying the microcomputers. Elementary PLL teachers were satisfied with the services provided by visiting PLL Company consultants, and middle school Dolphin teachers were satisfied with technical assistance available to them from an "800" number of the TSC Company. For the most part, elementary teachers were satisfied with the computer-generated diagnosis and prescription. However, there was some indication that diagnosis and prescription may not be geared to accommodate pupils at the lowest reading levels, and that prescriptions were sometimes too difficult for some pupils because diagnostic tests did not control for guessing. At the middle school level, teachers in two of the three project schools were satisfied with computer-generated diagnoses and prescriptions, but teachers at the other middle school preferred the option of basing skill assignments on diagnosis available from the JI form of the Metropolitan Achievement Tests. The average time per week at a microcomputer terminal was estimated to be 57.2 minutes per pupil in the elementary units, and 74.2 minutes per pupil in middle school units. It should be noted that elementary PLL pupils also received instruction on a variety of other teaching machines in addition to their instruction at microcomputer terminals.

The program evaluation included one further analysis not in the original evaluation design: a cost-benefit analysis comparing the CAI/CMI groups and comparable grade levels in the group receiving regular program instruction. The results of the cost-benefit analysis are summarized in Table 16. The cost per pupil used in Table 16 is based on average daily membership. Costs included in the analysis included average salaries for elementary teachers, middle school teachers, and elementary CAI/CMI aides, and the contract costs for elementary PLL Reading Labs and middle school Dolphin Reading Labs. Normal supplies and incidental costs were not known in regard to separate treatment

Table 16

Cost-Benefit Analysis for 1982-83 CLEAR Program
Comparing Groups Receiving Computer Assisted Instruction/Computer
Managed Instruction (CAI/CMI) and Groups Receiving Regular Program Instruction

Program	Number of Teachers	Program Cost		Average Daily Membership		Cost Per Pupil	Pupils Meeting Attendance Criterion	Ratio of Sample to Pupils Served	Average NCE Gain
		Total	Per Teacher	In Program	Per Teacher				
CLEAR-PLL (grades 4-5 with CAI/CMI)	6	300,503	50,083.83	361.1	60.2	832.19	70.4%	62.6%	4.7
CLEAR Grades 4-5 (Public Schools Regular Group)	19	570,817	30,043.00	637.8	33.6	894.98	66.4%	60.5%	5.1
CLEAR Dolphin Grades 6-8 with CAI/CMI	6	244,377	40,729.50	243.8	40.6	1002.37	65.3%	61.7%	3.3
CLEAR Grades 6-8 (Public Schools Regular Group)	25	727,250	20,090.00	1160.9	46.4	626.45	64.0%	59.6%	7.8

groups, but were assumed to be evenly distributed. Any error of cost estimate would probably be in the direction of underestimating costs for the regular group, since many instructional materials for the CAI/CMI groups were included in the lab contract costs. For purposes of this comparison, the regular group was limited to units located in public elementary and middle schools in order to keep the groups as comparable as possible.

The elementary CAI/CMI group was cost-efficient in terms of cost per pupil, costing approximately sixty dollars less per pupil than the regular elementary group, but had a slightly lower average NCE gain (by a fraction of an NCE point) than did the regular group. The middle school CAI/CMI group cost over a hundred dollars more per pupil than did the regular middle school group and made a smaller NCE gain (4.5 NCE's less) than the regular middle school group. The average daily membership per teacher indicates that at the elementary level the CAI/CMI group served considerably more pupils per teacher than did the regular group, but that this was not true at the middle school level. At both levels, pupil attendance was slightly better in the CAI/CMI groups, as evidenced by the percent of pupils meeting the attendance criterion, and the percent of pupils served who qualified for inclusion in the evaluation sample.

Summary/Recommendations

A total of 5392 pupils was served by the CLEAR program during the 1982-83 school year. Average daily membership in the program was 4606.8.

The evaluation sample consisted of 3356 pupils who met the program attendance criterion, were English-speaking and received both the pretest and posttest. Analysis of pretest-posttest achievement data indicated an average gain of 9.0 NCE points for the seven month treatment period, or 1.3 NCE points per month of measurable instruction. This fell short of the performance objective of an average growth of 1.5 NCE points per month for the program. When data were analyzed by grade, however, it was noted that the evaluation criterion was met in grade three and exceeded in kindergarten and grade one. Smaller positive NCE gains were made at the other grade levels. Grades that approached the criterion score, and their average NCE gains per month were grade two (1.4 NCE's), grade six (1.3 NCE's), and grade five (1.2 NCE's). The smallest NCE gain per month (0.4) occurred at grade four. It should be noted, however, that NCE scores are based on percentiles, which compare the pupil's performance in relation to the general population. Even a small gain in percentile or NCE score indicates that a pupil has progressed over the school year at a somewhat greater rate than would be expected from the pupil's original position in terms of the general population. It should further be noted that there was substantial progress in terms of the median grade placement scores over the seven-month period between pretest and posttest in all grades except kindergarten and grade four.

Process evaluation conducted during pretest and posttest verified that proper testing procedures were followed. The few cases where defects were noted involved omission of certain materials, or elements of the physical environment which the teacher could not be expected to control.

The total number of program teachers was 122. The number of teachers having master's degrees was 60, or 49.2% of the teaching staff. The number of teachers having reading certification was 58, or 47.5% of the program teachers. CLEAR teachers reported an average of 9.4 years of Title I/Chapter 1 teaching experience, and an average of 21.5 years of overall teaching experience.

CLEAR teachers reported a total of 6694 contacts with 3184 parents of program pupils involving 3941.85 parent hours. An additional 721 contacts were made with 593 parents who did not have children in the program involving 723.0 parent hours.

Positive ratings were given by CLEAR teachers to the Chapter 1 inservice sessions in which they participated. Inservice features receiving positive comments by program teachers included inspired or enthusiastic speakers, small group sessions, handouts, commercial exhibits, and presentation of practical methods and suggestions. The most frequent criticism by program teachers was of presentations that were repetitious of things heard before.

The 1982-83 CLEAR program included two pilot projects utilizing computer assisted/computer managed instruction (CAI/CMI). Six of the elementary teachers participated in the Prescription Learning Laboratory (PLL) project, and six of the middle school teachers participated in the Dolphin project. The number of pupils served in these projects was 423 in elementary grades 4-5 and 274 in middle school grades 6-8. The CAI/CMI evaluation sample consisted of 265 elementary and 169 middle school pupils. Comparison of achievement test data between pupils in the CAI/CMI projects and pupils in the same grade levels of the regular treatment group indicated greater average NCE gains in the regular treatment group. At the elementary level (grades 4-5), the average NCE gains for the year were 4.7 for the CAI/CMI group and 5.1 for the regular group. At the middle school level the average NCE gains for the year were 3.3 for the CAI/CMI group and 7.9 for the regular group.

A cost benefit analysis indicated that the elementary CAI/CMI group was cost effective in terms of the cost per pupil, and in consideration that the discrepency in terms of NCE scores was not great. The middle school CAI/CMI project had a more serious discrepency in terms of NCE scores, and also cost more per pupil than the regular group. The cost per pupil in the middle school CAI/CMI group would have been reduced considerably if the number of pupils per teacher had been increased as had occurred in the elementary CAI/CMI group. One of the premises of utilizing microcomputers in the program had been the capability of serving more pupils per teacher. One further finding of the cost-benefit analysis was that pupil attendance was somewhat better in both CAI/CMI groups than in comparable grades of the regular treatment group.

In addition to the program's overall achievement objective, there were three objectives which applied only to the CAI/CMI pilot projects. The first of these objectives stated that pupils in the CAI/CMI projects who attended 80% of the seven month treatment period would gain an average of seven prescriptive reading skill objectives in mastery tests performed at the microcomputer terminals. This objective was achieved in both projects. Prescription Learning Laboratory pupils in grades 4-5 gained an average of 11.5 objectives in a continuum of 30 objectives. The middle school Dolphin project, which had a greater number of possible objectives, attained an average pupil gain of 32.5 reading skill objectives and 11.4 language objectives.

The remaining two objectives pertain to inservice activities provided by Prescription Learning Laboratory Company in the elementary project, and TSC Company in the middle school project. Inservice activities were intended to provide teachers with instruction in the following areas: operating the project's teaching machines, instructing pupils in the use of teaching machines, prescribing instructional strategies, and maintaining a computerized instructional management system. These four areas of instruction furnished the criteria for the final two objectives.

The first of the CAI/CMI inservice objectives stated that all CAI/CMI teachers would be able to respond correctly to 80 percent of the items in an instrument dealing with content of the inservice instruction. The objective was attained in the middle school project, but not in the elementary project. However, the average score for elementary CAI/CMI teachers was 82.5%. The average score for middle school CAI/CMI teachers was 88.2%.

The final CAI/CMI inservice objective stated that all CAI/CMI teachers would indicate in May, 1983, that inservice activities provided by the servicing companies during the school year were of value to them in the four areas of inservice instruction identified above. Workshops included initial training sessions and follow-up sessions. Inservice activities were also considered to include the on-going help provided by the PLL Company's visiting consultants in the elementary project, the services of a toll-free telephone number in the middle school project, and printed materials furnished by the servicing companies. The objective was partially attained. Elementary CAI/CMI teachers all agreed that inservice activities were of value to them in two of the four areas of the objective (learning to use instructional machines and instructing pupils in using machines). Middle school teachers all agreed that inservice activities were of value to them in three of the four areas of the objective (learning to use instructional machines, instructing pupils in using machines, and maintaining a computerized instructional management system).

Process evaluation indicated that delays in installation of equipment prevented implementation of the middle school CAI/CMI project until after the Thanksgiving break. This may account in part for disappointing results in achievement test scores noted in this project. Other process evaluation data indicated that visiting consultants in the elementary project and the toll-free telephone

number for the middle school project were both considered valuable services by project teachers. Teachers indicated that technical difficulties occurring with machines and software were satisfactorily resolved by the servicing companies. Most teachers were satisfied with computer-generated diagnosis and instructional prescriptions, however, some difficulties were noted. Teachers reported that pupils readily became accustomed to using the microcomputers.

The findings above indicate that the 1982-83 CLEAR Program approached but did not attain the program performance objective in terms of NCE points. Grades making the least progress in terms of NCE points were grades four, seven, and eight, though grades seven and eight showed substantial gains in terms of median grade placement. Elementary and middle school pilot projects which utilized microcomputers were successful in terms of increased mastery of specific reading and language skills, but did less well than the regular treatment group in terms of NCE points. Two objectives regarding inservice for the CAI/CMI projects were partially attained.

It is recommended that the CLEAR Program be continued during the 1983-84 school year, with special consideration given to the following:

1. The small gains in NCE points noted at grades four, seven, and eight have been noted in evaluations for previous years, as well as in the present report. Further study may be indicated to determine whether there may be some peculiarity in either the maturational process or the norms used at these grade levels. Information from other school systems may be helpful in such a study. These grade levels might also be studied for possible delayed effects that are not apparent during the treatment year.

2. The pupil-teacher ratio in middle school CAI/CMI units should be increased for better cost effectiveness.

3. Inservice activities specific to the CAI/CMI projects should be continued in order to reinforce and expand teacher skills needed in implementing the projects. Inservice should be especially in-depth for any new teachers assigned to the projects.

4. Certain difficulties attended the implementation of the CAI/CMI pilot projects in the 1982-83 school year. These difficulties may be partly attributable to the time and effort required for teachers to learn the requisite new skills for managing a CAI/CMI class. Unavoidable program delays, especially in the middle school project, may also account for some of the difficulties. These projects should be monitored in the 1983-84 school year to see if previous CAI/CMI teaching experience and earlier project implementation will lead to better pupil performance. Options should also be kept open for alternative methods of instruction.

APPENDIX

TEACHER NUMBER	PROGRAM CODE

STUDENT	SCHOOL	GRADE	SEX
			MALE ○ FEMALE ○

TOTAL DAYS OF PROGRAM ENROLLMENT (1 2 3)	TOTAL DAYS OF PROGRAM ATTENDANCE (4 5 6)	HOURS OF INSTRUCTION PER WEEK

NCS Trans-Optic 08-8153.32

51

COLUMBUS PUBLIC SCHOOLS - Columbus, Ohio PUPIL CENSUS FORM

LAST NAME _____ FIRST NAME _____ M I _____ SEX _____ TEACHER NUMBER _____

SCHOOL _____ H R _____ GRADE _____

USE A NUMBER 2 PENCIL. ERASE COMPLETELY WHEN MAKING CORRECTIONS.

52

TEACHER CENSUS FORM

Social Security Number ☐☐☐-☐☐-☐☐☐☐

Name_____

School Assignment_____ School Code_____

Program Assignment_____ Program Code_____

[a]Number of Years of Teaching Experience_____

[b]Number of Years of Title I Teaching Experience_____

[c]I am certified in reading as indicated by the subject area on my teaching certificate.

_____Yes _____No

Highest College Degree Received_____

Full-Time Employee_____
or
Part-Time Employee_____

---

[a]Total of years of experience, including those which may have occurred outside of the City of Columbus. Please include present school year.

[b]1. For every full year taught in Title I give yourself 10 months experience. Please include the present school year.

2. For every summer term you taught in Title I give yourself 2 months experience.

3. Add in any miscellaneous experience, a part-year perhaps.

4. Add the totals for 1, 2, and 3 and divide by 10. Place the resulting quotient in the blank for question b above.

[c]Certification is defined as having one of the following:

1. reading specified on Bachelor degree.

2. reading specialist certificate.

3. M.A. in reading as a subject.

PARENT INVOLVEMENT SURVEY

SCHOOL MAIL

mailing label
goes here

Name _____

School _____

For the Month of _____

	(A) Number of Parents	(B) Total Number of Hours
1. Parents involved in the planning operation and/or evaluation of your unit	_____	_____
2. Group Meetings for Parents	_____	_____
3. Individual Parent Conferences	_____	_____
4. Parental Classroom Visits or Field Trips	_____	_____
5. Visits by you to Parent Homes	_____	_____
6. Totals	_____	_____
7. Estimated Unduplicated Count of Parents	_____	

DIRECTIONS:

1. Complete all information; fold over so back is showing; staple; and place in school mail.

2. Place a parent in only one activity for any one meeting.

3. Total hours equals the number of parents times the number hours spent, e.g., a group meeting for 10 parents which lasts 3 hours would result in 10 parents (Column A) and 30 hours (Column B); 15 parent conferences each for 30 minutes would result in 15 parents and 7.5 hours. Please round all figures in Column B to the nearest half hour. Enter half hours as .5; No fractions please.

4. Item 7 - This is total parents seen not total in 6A. If you had 16 parent conferences but 10 conferences were with 1 parent the unduplicated count is 7 parents - you saw 7 parents but had 16 conferences. Do not count a parent more than once. The figure in Item 7A should not exceed the figure for Item 6A.

SCHOOL MAIL

Mailing Label Here

PARENT INVOLVEMENT SURVEY

IMPORTANT

_____
ANNUAL UNDUPLICATED COUNT

Enter on the line to the left the annual unduplicated count of the number of parents you have involved in any of the Activities 1-5 below. COUNT EACH PARENT ONLY ONCE FOR THE YEAR. If you have questions regarding this count, please call John Duffy at 222-3150 or bring your question(s) to the end-of-year inservice meeting.

COMPLETE THE REST OF THIS REPORT FOR JUNE ONLY

Activities	(A) Number of Parents	(B) Total Number of Hours
1. Parents involved in the planning operation and/or evaluation of your unit	_____	_____
2. Group Meetings for Parents	_____	_____
3. Individual Parent Conferences	_____	_____
4. Parental Classroom Visits or Field Trips	_____	_____
5. Visits by You to Parent Homes	_____	_____
6. Totals	_____	_____
7. Estimated Unduplicated Count of Parents	_____	

DIRECTIONS:

1. Complete all information; fold over so back is showing; staple; and place in school mail.
2. Place a parent in only one activity for any one meeting.
3. Total hours equals the number of parents times the number hours spent, e.g., a group meeting for 10 parents which lasts 3 hours would result in 10 parents (Column A) and 30 hours (Column B); 15 parent conferences each for 30 minutes would result in 15 parents and 7.5 hours. Please round all figures in Column B to the nearest half hour. Enter half hours as .5; No fractions please.
4. Item 7 - This is total parents seen not total in 6A. If you had 16 parent conferences but 10 conferences were with 1 parent the unduplicated count is 7 parents - you saw 7 parents but had 16 conferences. Do not count a parent more than once. The figure in Item 7A should not exceed the figure for Item 6A.

RETURN RIGHT AWAY BUT NOT LATER THAN MONDAY, JUNE 6, 1983.

PARENT INVOLVEMENT SURVEY

SCHOOL YEAR ESTIMATES OF PARENTS
OF NON-PROGRAM STUDENTS

Name_____

School_____

Activities	(A) Number of Parents	(B) Number of Parent Hour
1. Parents involved in the planning operation and/or evaluation of your unit (do not include Parent Advisory Council members).	_____	_____
2. Group Meetings for Parents (do not include Parent Advisory Council meetings).	_____	_____
3. Individual Parent Conferences	_____	_____
4. Parental Classroom Visits or Field Trips	_____	_____
5. Visits by you to Parent Homes	_____	_____
Estimated Unduplicated Count of Parents	_____	

DIRECTIONS: Please complete all information; indicate a 0 if the number of parents or hours is actually zero - otherwise enter the number.

Column A (Number of Parents) lines 1-5: Please place a parent in only one activity for any one meeting.

Column B (Number of Parent Hours) lines 1-5: Indicate the sum of the hours each parent spent in an activity. For example, a group meeting with 10 parents which lasted 3 hours should result in a 10 on line 2/Column A and a 30 on line 2/ Column B (each parent met with the teacher 3 hours and there were 10 parents). Please round all figures in Column B to the nearest half-hour. Enter half hours as .5 ; no fractions please.

For the Estimated Unduplicated Count of Parents do not count a parent more than once (even if a parent is listed in more than one activity).

Having completed all the information on this survey; fold it so the back is visible; staple and place it in the school mail.

Thank you.

RETURN RIGHT AWAY BUT NOT LATER THAN MONDAY, JUNE 6, 1983.

GENERAL INSERVICE EVALUATION FORM

Inservice Topic: _____

Presenter(s): _____

_____

Date: _____ _____(e.g., 9/7/82)

Session: _____ a.m. or _____ p.m.

Fund: (circle only one)
(1) Chapter 1 (2) DPPF (3) General
(4) Other (Specify) _____

Program: (circle only one)
(1) ADK (2) Aides (3) CLEAR-Elem (K-5)
(4) CLEAR-Middle (5) HSCA (6) OND
(7) SDR (8) Regular Teacher
(9) Other (Specify) _____

Circle the number that indicates the extent to which you agree with statements 1-4.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1. I think this was a very worthwhile meeting.	1	2	3	4	5
2. The information presented in this meeting will assist me in my program.	1	2	3	4	5
3. There was time to ask questions pertaining to the presentation.	1	2	3	4	5
4. Questions were answered adequately.	1	2	3	4	5

5. What was the most valuable part of this meeting? _____

_____

6. What was the least valuable part of this meeting? _____

_____

7. What additional information or topics would you like to see covered in future meetings? _____

_____

_____

DES 8/82

ECIA CHAPTER 1
ORIENTATION INSERVICE EVALUATION FORM
September 7, 1982

Fund: (Circle only one)
(1) Chapter 1 (2) DPPF (3) General
(4) Other (specify) _____

Program (Circle only one)
(1) ADK (2) Aides (3) Chapter 1 - Elem. (K-5)
(4) Chapter 1 - Middle (5) HSCA (6) OND
(7) SDR (8) Regular Teacher
(9) Other (specify) _____

Circle the number that indicates the extent to which you agree with statements 1-9.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
General Meeting					
1. I think the presentation by Dr. Michael Milone was very worthwhile.	1	2	3	4	5
2. The information presented by Dr. Michael Milone will assist me in my program.	1	2	3	4	5
Mini Sessions					
3. The exhibit of materials was very valuable.	1	2	3	4	5
4. The information presented by Dr. Milone during the mini-session will assist me in my program.	1	2	3	4	5
5. The Chapter 1 mini-session heightened my awareness of overall program procedures.	1	2	3	4	5
6. The evaluation presentation will assist me to successfully complete this year's evaluation requirements.	1	2	3	4	5
Overall					
7. There was time to ask questions pertaining to the presentations.	1	2	3	4	5
8. Questions were answered adequately.	1	2	3	4	5
9. The orientation meeting was worthwhile.	1	2	3	4	5

10. What was the most valuable part of this meeting? _____

_____

11. What was the least valuable part of this meeting? _____

_____

12. What additional information or topics would you like to see covered in future meetings?

_____

_____

_____

ES 8-82

PRESCRIPTION LEARNING LABORATORY
INSERVICE ASSESSMENT FORM

Part I. Inservice Rating Scale

1. The three-day PLL inservice workshop in September provided instruction in the following areas. Please rate the quality of that instruction by circling the appropriate numbered ratings.

	Poor	Satisfactory	Good	Excellent	Superior
a. Operating teaching machines	1	2	3	4	5
b. Instructing pupils in the use of teaching machines	1	2	3	4	5
c. Prescribing instructional strategies	1	2	3	4	5
d. Maintaining a computerized management system	1	2	3	4	5

2. Visits to your lab by the company consultant are meant to assist you to increase your proficiency in the following areas. Please rate the quality of that assistance by circling the appropriate numbered ratings.

	Poor	Satisfactory	Good	Excellent	Superior
a. Operating teaching machines	1	2	3	4	5
b. Instructing pupils in the use of teaching machines	1	2	3	4	5
c. Prescribing instructional strategies	1	2	3	4	5
d. Maintaining a computerized management system	1	2	3	4	5

PRESCRIPTION LEARNING LABORATORY
INSERVICE ASSESSMENT FORM

Part II. Content Assessment

Please circle the one response that best answers each of the following questions.

1. When using the Califone, the student records responses

   a. using the keyboard
   b. by pressing the "student" button
   c. by pressing the "record" button
   d. by pressing both the "student" and "record" buttons
   e. in a workbook

2. The name of the filmstrip projector used in the PLL lab is the

   a. Craig b. Hoffman c. Dukane d. Audiotron e. Califone

3. Which program on the PET computer is used to add, delete, or update student records?

   a. Hands on Testing b. Standardized Testing c. Report Menu
   d. Inquiry Program e. Maintenance Program

4. Student records are stored on the

   a. Floppy Disk b. Tape Cassette c. Printer d. Display Screen
   e. Hard Disk

5. Which objective on the Main Menu gives you a visual display of information with no hard copy?

   a. Hands on Testing b. Standardized Testing c. Report Menu
   d. Inquiry Program e. Maintenance Program

6. The Lab Profile Report prints the skill continuum in regard to

   a. an individual pupil
   b. pupils grouped by lab period
   c. pupils grouped by similar needs
   d. the report to parents
   e. the listing of available materials

7. For the Hands on Testing, the number of questions presented to test each skill is

   a. 1 b. 2 c. 3 d. 6 e. 10

8. Daily scheduling of pupils to the various work stations is determined by the

   a. students b. teacher c. PET computer d. company consultant

9. Which teaching machine allows the operator to control the speed of the machine?

   a. Craig b. Hoffman c. Dukane d. Audiotron e. Califone

10. The button the student should <u>not</u> press while listening to tapes in the Tape Player is

    a. Rewind b. Forward c. Reverse d. Record e. Stop

DES 10/82

CLEAR-PLL-Mid (Dolphin)
INSERVICE ASSESSMENT FORM

Part I. Inservice Rating Scale

The four-day Dolphin inservice workshop in November provided instruction in working with the Dolphin computers. Please rate the quality of that instruction in the following areas by circling the appropriate numbered ratings.

	Poor	Satisfactory	Good	Excellent	Superior
1. Operating teaching machines	1	2	3	4	5
2. Instructing pupils in the use of teaching machines	1	2	3	4	5
3. Prescribing instructional strategies	1	2	3	4	5
4. Maintaining a computerized management system	1	2	3	4	5

Part II. Content Assessment

Please circle the one response that best answers each of the following questions.

1. Which of the following must a student know to sign on for a student session?

   a. A little knowledge of Basic computer language
   b. His or her first name
   c. His or her teacher's number
   d. How to turn on his terminal

2. The only place in the program where it is safe to turn off the computer is

   a. Assignment Menu b. Operator's Main Menu c. Report Menu
   d. Teacher's Main Menu

3. Which list contains all the information you have entered for each student?

   a. Class List b. Enrollment List c. Master List
   d. Teacher List

4. Floating students should be

   a. brought down gradually
   b. reported to an "800" number
   c. sent home
   d. thrown a life preserver

5. The computer is turned on and off by someone acting in the capacity of

   a. Curriculum Manager b. Student c. System Operator d. Teacher

6. Instructional decisions are controlled by the

   a. Computer b. Curriculum Manager c. System Operator d. Teacher

7. Which option do you use to establish on-computer assignments for individuals or groups?

   a. Assignment Maintenance b. Referral Maintenance c. Skill Maintenance
   d. Student Maintenance

8. Which option do you use to establish prescription of your own classroom materials for off-computer work in specific skill areas?

   a. Assignment Maintenance b. Clear Work c. Referral Maintenance
   d. Student Maintenance

9. Which key did your instructor tell you would "get you out of anything"?

   a. Back Space b. Bye c. Return d. Shift

10. According to your instructor, one behavior which is generally more readily adopted by pupils than by adults is

   a. Reading the screen
   b. Responding correctly to skill items
   c. Selecting programs
   d. Signing on to the computer

11. What is the purpose of the backup tapes?

_____

_____

_____

_____

12. How do you brush the Dolphin's teeth?

_____

_____

_____

_____

Chapter 1 and DPPF Projects

CLEAR AND SDR COMPUTER TRAINING EVALUATION FORM

Grade Level (Check one) Elementary_____ Middle School___ High School ___

This is an end-of-the year measure of how well certain inservice training activities have provided help for you in the following areas:

a. Using instructional machines
b. Instructing pupils in the use of instructional machines
c. Prescribing instructional strategies
d. Maintaining a computerized instructional management system

For the purposes of this evaluation form, the term "inservice training" is broadly defined as follows:

a. Workshops or training sessions presented by the company that supplies your computers

b. Help from the visiting company consultants (elementary and high school levels only)

c. Help with technical difficulties via the toll-free telephone number (middle school level only)

d. Instructions and explanations from printed materials supplied by the company - manuals, handbooks, program notebooks, etc.

Circle the number which indicates the extent to which you agree with the following statements (please give a rating to each sub-statement of all items that pertain to your level of instruction):

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1. Workshops or training sessions by the company that supplies our computers have been valuable to me in					
a. learning to use the instructional machines	1	2	3	4	5
b. instructing pupils in using the instructional machines	1	2	3	4	5
c. prescribing instructional strategies	1	2	3	4	5
d. maintaining a computerized instructional management system	1	2	3	4	5
e. implementing the overall program	1	2	3	4	5

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
2. (To be completed by elementary and high school teachers only)					
The services of the visiting company consultants have been valuable to me in					
a. learning to use the instructional machines	1	2	3	4	5
b. instructing pupils in using the instructional machines	1	2	3	4	5
c. prescribing instructional strategies	1	2	3	4	5
d. maintaining a computerized instructional management system	1	2	3	4	5
e. implementing the overall program	1	2	3	4	5
3. (To be completed by middle school teachers only)					
The services provided with the toll-free telephone number have been valuable to me in					
a. learning to use the instructional machines	1	2	3	4	5
b. instructing pupils in using the instructional machines	1	2	3	4	5
c. prescribing instructional strategies	1	2	3	4	5
d. maintaining a computerized instructional management system	1	2	3	4	5
e. implementing the overall program	1	2	3	4	5

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
4. Instructions and explanations from printed materials furnished by the company have been valuable to me in					
a. learning to use the instructional machines	1	2	3	4	5
b. instructing pupils in using the instructional machines	1	2	3	4	5
c. prescribing instructional strategies	1	2	3	4	5
d. maintaining a computerized instructional management system	1	2	3	4	5
e. implementing the overall program	1	2	3	4	5
5. The overall inservice training has been valuable to me in					
a. learning to use the instructional machines	1	2	3	4	5
b. instructing pupils in using the instructional machines	1	2	3	4	5
c. prescribing instructional strategies	1	2	3	4	5
d. maintaining a computerized instructional management system	1	2	3	4	5
e. implementing the overall program	1	2	3	4	5

6. Please indicate any aspect or procedure of inservice that you considered most helpful this year.

_____

_____

7. Please indicate any aspect or procedure of inservice that you considered least beneficial this year.

_____

_____

8. Please indicate any suggestions you may have to further improve the inservice process for teachers using computers in their programs.

_____

_____

_____

ES 4/83

Observer _____ School _____ Date _____

Time of Day _____ Day of Week _____ Number of Students _____

Program _____ Grade _____ Test _____

Testing Environment

Use the following key to rate the conditions of the testing environment.

VG = Very Good
G = Good
A = Acceptable
P = Poor
VP = Very Poor

Lighting in the testing area	VG	G	A	P	VP
Space for each student	VG	G	A	P	VP
Sound or noise level	VG	G	A	P	VP
Temperature	VG	G	A	P	VP

Type of Room: Classroom____ Library____ Lunchroom ____

Other _____

Test Directions

How were the directions given? Read by Proctor____ Written on the Board____

Other _____

1. Audibleness of the instructions	VG	G	A	P	VP
2. Extent to which proctor provided for students' questions	VG	G	A	P	VP
3. The clarity of proctor(s) answers to students' questions	VG	G	A	P	VP
4. Clarity of directions for marking answer	VG	G	A	P	VP
5. Extent to which proctor followed directions in the examiner's manual	VG	G	A	P	VP
6. Attitude of the proctor toward the testing process	VG	G	A	P	VP
7. Accuracy of the procedure for timing the test	VG	G	A	P	VP

. Testing Materials

During the testing session the following materials were available:

1. A test booklet for each pupil with answer sheet where applicable — Yes___ No___ NA___
2. A copy of the test booklet for demonstration purposes — Yes___ No___ NA___
3. Teacher's Directions — Yes___ No___ NA___
4. A pencil with eraser for each pupil, plus extras to cover breakage — Yes___ No___ NA___
5. A stopwatch, or a watch or clock with a second hand, to be used for timing the tests — Yes___ No___ NA___
6. A "Testing--Do Not Disturb" sign for the door. — Yes___ No___ NA___
7. A paper or cardboard place marker, approximately 2" x 4" for each pupil, plus extras (PP and PR levels only) — Yes___ No___ NA___

During the Tests:

1. Proctor circulated continuously around the room monitoring students — Yes___ No___
2. Proctor limited assistance to mechanical aspects of marking answers, clarifying directions, and finding right place on answer sheet. — Yes___ No___
3. Were there interruptions or disturbances during the testing period. If yes, please specify (what and how many times): _____ — Yes___ No___

_____

_____

_____

CHAPTER 1 AND DPPF TESTING OBSERVATION SCALE

Observer_____ School_____ Date_____

Time of Day_____ Day of Week_____ Number of Students_____

Program_____ Grade_____ Test_____

Testing Environment

Use the following key to rate the conditions of the testing environment.

VG = Very Good
G = Good
A = Acceptable
P = Poor
VP = Very Poor

Lighting in the testing area	VG	G	A	P	VP
Space for each student	VG	G	A	P	VP
Sound or noise level	VG	G	A	P	VP
Temperature	VG	G	A	P	VP

Type of Room: Classroom_____ Library____ Lunchroom____

Other_____

Test Directions

How were the directions given? Read by Proctor_____ Written on the Board_____

Other_____

1. Audibleness of the instructions	VG	G	A	P	VP
2. Extent to which proctor provided for students' questions	VG	G	A	P	VP
3. The clarity of proctor(s) answers to students' questions	VG	G	A	P	VP
4. Clarity of directions for marking answer	VG	G	A	P	VP
5. Extent to which proctor followed directions in the examiner's manual	VG	G	A	P	VP
6. Attitude of the proctor toward the testing process	VG	G	A	P	VP
7. Accuracy of the procedure for timing the test	VG	G	A	P	VP

Testing Materials

During the testing session the following materials were available:

1. A test booklet for each pupil with answer sheet where applicable — Yes___ No___ NA___

2. A copy of the test booklet for demonstration purposes — Yes___ No___ NA___

3. Teacher's Directions — Yes___ No___ NA___

4. A pencil with eraser for each pupil, plus extras to cover breakage — Yes___ No___ NA___

5. A stopwatch, or a watch or clock with a second hand, to be used for timing the tests — Yes___ No___ NA___

6. A "Testing--Do Not Disturb" sign for the door — Yes___ No___ NA___

7. A paper or cardboard place marker, approximately 2" x 4" for each pupil, plus extras (PP and PR levels only) — Yes___ No___ NA___

During the Tests:

1. Proctor circulated continuously around the room monitoring students — Yes___ No___ NA___

2. Proctor limited assistance to mechanical aspects of marking answers, clarifying directions, and finding right place on answer sheet — Yes___ No___ NA___

3. Were there interruptions or disturbances during the testing period. If yes, please specify (what and how many times):_____ — Yes___ No___ NA___

_____

_____

_____

QUESTIONS FOR PLL LABS

Are kids getting accustomed to using computer?

Do they seem to be learning more?

Have you noticed any change in attendance since kids started using computer?

Have there been any technical difficulties with the system? - If so, have these been worked out satisfactorily?

Have you been satisfied with the services provided by the consultant?

Are you satisfied with the diagnosis and prescription as provided by the computer?

How many minutes per week is average kid on the computer?